

FINAL

CLEAN AIR ACT SECTION 112(r) INSPECTION REPORT

Industrial Chemicals Corporation

Penuelas, Puerto Rico

GENERAL INFORMATION

Stationary Source	Industrial Chemicals Corporation
Date of Inspection	March 12, 2008
USEPA Inspectors	Dwayne Harrington, USEPA – Region II (Edison, NJ) Carlos Rivera, USEPA – Region II, Caribbean Office, Enforcement Jose L. Ayala – RST 2, USEPA – Region II
Contract Auditor	Neil Mulvey, Sullivan Group (Subcontractor)
Description of Activities	<ul style="list-style-type: none">• Opening meeting with facility representative.• Program audit.• Closing meeting with facility representatives. Program audit consisted of the following activities: <ol style="list-style-type: none">1. Document review.2. Field verification.3. Personnel interviews

STATIONARY SOURCE INFORMATION

EPA Facility ID #	1000 0004 8236
Date of Latest Submission (used for RMP inspection)	Receipt Date: June 22, 2004 (Re-submission) Anniversary Date: June 18, 2009
Facility Location	St. Rd. 127, Km.19.1 Bo. Tallaboa Poniente Penuelas, PR 00624-1630 Tel. (787) 836-1260
Number of Employees	RMP*Submit states 48 employees. Facility management reported 50 – 60 employees, plus 10 – 12 temporary employees.

Description of Surrounding Area	The facility is located in an industrial section of Penuelas. The Caribbean Sea borders the facility to the south. Open space borders the facility immediately to the east and west. A new residential community is under construction approximately 0.5 miles to the east. Residences are located on the access road approaching the facility from the north.
Participants	Participants included representatives from: Dwayne Harrington, USEPA – Region II, Edison, NJ Carlos Rivera, USEPA – Region II, Caribbean Office Jose L. Ayala, USEPA Contractor – RST2 Neil P. Mulvey, USEPA Contractor – Sullivan Group Lorenz G. Gomez Soler, P.E., Vice President and Director of Plants Operations - Industrial Chemicals Corporation*

REGISTRATION INFORMATION

Process ID #	52087
Program Level (as reported in RMP)	Program 3
Process Chemicals	Ammonia (anhydrous) @ 350,000-lbs.
NAICS Code	325188 (All Other Inorganic Chemical Manufacturing)

GENERAL COMMENTS

NOTE: As noted in the findings described in the “Facility Tour” and “Findings/Recommendations” sections of this report, this inspection identified numerous physical hazards, as well as significant management and recordkeeping compliance issues. The physical hazards described in the “Facility Tour” section of the report could result in a potentially significant anhydrous ammonia release(s), if unaddressed.

The facility was constructed in 1976 as a sulfuric acid and chemicals manufacturing facility. The facility is located on a 15 acre site, five acres of which are used for manufacturing. The Caribbean Sea borders the facility to the south (no dock activities however). Open space borders the facility immediately to the east and west. A new residential community is under construction approximately 0.5 miles to the east. Residences are located on the access road approaching the facility from the north.

The Penuelas manufacturing facility produces inorganic chemicals including sulfuric acid (chemical and industrial grade), sodium sulfite and bisulfite. The sulfuric acid plant capacity is 60 tpd. The facility also produces the water treatment chemical aluminum sulfate (alum).

The facility uses anhydrous ammonia to produce ammonium hydroxide, ammonium bisulfite, and ammonium sulfoxides. Anhydrous ammonia is also used to produce aqueous ammonia (19 – 29%). The facility reported that 25% is the largest volume aqueous ammonia produced. Aqueous ammonia is shipped to customers in tank trucks or drums. Note that aqueous ammonia (concentration 20% or greater) exceeding 20,000-lbs. is RMP regulated. The facility has not registered for >20% aqueous ammonia.

The facility also operates as a distribution center for anhydrous ammonia. IMO-V isotainers are received and stored on-site before shipment to customers. The facility also fills isotainers with anhydrous ammonia for distribution. The facility uses a fleet of six isotainers for anhydrous ammonia distribution. The isotainers have a capacity of 6,500-gals. Facility management reported that typically there is at least one isotainer on-site at all times.

Facility management reported that due to current business demands, use of anhydrous ammonia is limited to distribution, and no manufacturing using anhydrous ammonia is currently being performed.

The facility operates three anhydrous ammonia bulk storage tanks, each with a rated capacity, based on tank specification sheets, of 35,000-gals. (est. 199,000-lbs. or 99.5 tons). Anhydrous ammonia is transferred to production areas via a 1.5” schedule 80 steel pipeline that runs partially underground. The facility reported that the registration quantity is based on a maximum of 65 tons per tank, at a maximum fill rate of 90%.

The facility operates 24/7. Two Plant Operations Superintendents report to the VP and Director of Plants Operations. Operations personnel include four supervisors and four operators. Normal staffing is one supervisor and one operator. On day shift, the Plant Superintendent is also on-duty. The facility reported that all maintenance is performed by in-house maintenance personnel, using 25 – 30 employees.

RMP DOCUMENTATION

Written description of the facility's RMP procedures are contained in the "Process Safety Management Plan for Anhydrous Ammonia" manual (revision date 6/20/07).

The Vice President and Director of Plants Operations has overall responsibility for implementation of the RMP program and was the primary representative for Industrial Chemicals during this inspection. The facility did not demonstrate an understanding of the RMP program requirements nor were there records available to support implementation.

Comments regarding select RMP elements follow:

Management System [40 CFR 68.15]

While the Vice President and Director of Plants Operations has overall responsibility for implementation of the RMP program, he did not demonstrate an understanding of the RMP program requirements. There was no written description of a management system.

Hazard Assessment

The nearest public receptor is less than 0.5 miles from the facility. The facility used EPA's *RMP Comp* to determine the Worst Case and Alternative Case OCAs. The facility's calculated population impact is approximately 36% of the value determined by EPA. Information provided by the facility suggests that their method for determining population impact may not be consistent with RMP requirements.

The facility did not provide descriptions of their worst and alternative case release scenarios.

Process Safety Information (PSI) [40 CFR 68.65]

PSI available for review included:

- MSDS for anhydrous ammonia
- Site plot plan
- P&ID – Ammonia Storage Facilities, Loading & Unloading IMO V Tanks; 4/17/07.
- P&ID – Aqueous Ammonia Unit; 5/7/07 (Rev. 2007).

- Specification data for the three bulk anhydrous ammonia storage tanks
- Specification data for the IMO V Tanks (isotainers)
- Copy of ANSI K61.1-1999 – Requirements for the Storage and Handling of Anhydrous Ammonia

See RMP Checklist for list of PSI required items not available for review.

Process Hazard Analysis (PHA) [40 CFR 68.67]

The PHA of the process consists of three “What-If” questions. For each scenario, causes, consequences, and safeguards are documented. This however does not constitute a PHA as required by 40 CFR 68.67. There was no record of a PHA other than these three questions

Standard Operating Procedures (SOPs) [40 CFR 68.69]

The facility has the following written operating procedures:

- Aqueous Ammonia Process – SOP; Rev. date 6/14/07
- Ammonia Tank Truck Reloading – SOP; Rev. 6/13/07
- Ammonia Tank Truck Unloading – SOP; Rev. 6/12/07

These written operating procedures include the following information:

- Safety precautions
- Potential hazards of anhydrous ammonia
- PPE requirements
- Emergency response procedures; spill leak procedures; first aid procedures
- Process flow diagram
- Step-by-step procedures

Training [40 CFR 68.71]

Operator training is described in the written description of “Employee Refresher Training” (rev. date March 1997). Operator training includes initial and refresher training at least once every three years. Training documentation includes:

- List of attendees with signatures
- Identification of instructor with signature
- Training date and training time

Documentation was available for the following training:

- Asbestos exposure – 7/18/07
- Lock-out/Tagout – 3/30/07
- PSM Employee Refresher Training – 12/21/07, 12/18/07, 12/31/07
- Emergency Release Notification – 12/18/07
- Hazardous Materials Training and Testing – 12/17/07

Mechanical Integrity [40 CFR 68.73]

Reviewed inspection records of the three anhydrous ammonia storage tanks completed on 7/30/07 by an outside contractor. Also reviewed inspection records regarding integrity of two isotainers performed in April 2003 and April 2005.

There was no list of equipment included in the mechanical integrity program. There was no schedule of inspections and tests on equipment, instruments, and safety systems used in the covered process. Other than the tank inspection records described above, there was no record of completed inspection and tests.

Management of Change (MOC) [40 CFR 68.75] & Pre-Startup Review (PSR) [40 CFR 68.77]

There was no written MOC procedure available for review. There was no written PSR procedure available for review. The facility did have a form for documenting MOC reviews. There were no completed MOC or PSR reviews available for inspection.

Compliance Audits [40 CFR 68.79]

There was no record of completed RMP compliance audits.

Incident Investigation [40 CFR 68.81]

There was no record of a written incident investigation procedure. OSHA 300 records for the period 2002 – 2007 were reviewed. There were no reported incidents of anhydrous ammonia or aqueous ammonia releases resulting in employee injury. Facility management stated that there have been no releases of anhydrous ammonia or aqueous ammonia releases.

Employee Participation [40 CFR 68.83]

There is a general description of employee participation. Due to the lack of overall RMP documentation however, there were no records of employee participation.

Hot Work Permit [40 CFR 68.85]

There was no record of a hot work permit program.

Contractor Safety [40 CFR 68.87]

There was no record of written contractor safety procedures. Facility management reported that contractors are not used at the facility, except to perform inspections of the anhydrous ammonia storage tanks.

Emergency Response [40 CFR 68.90 – 68.95]

USEPA: the facility does not have a written emergency response plan. In the event of an emergency, the facility dials 911, however, they are unaware if the local fire department or emergency services maintains a response plan for the facility.

FACILITY TOUR

Several items noted during the facility tour include:

- ❑ Handles on manual valves used to control liquid and vapor anhydrous ammonia flow showed signs of significant corrosion, some so extensive that the valve could not be safely operated. Note also a missing plug or cap at the end of an anhydrous ammonia transfer line.
- ❑ The anhydrous ammonia transfer line from the bulk storage tanks to the plant is very vulnerable to impact from moving equipment or to operations at the bauxite weigh hopper area.
- ❑ The anhydrous ammonia transfer line runs through overgrown vegetation. Industry standard is to maintain good housekeeping, including clearing brush away from process equipment.
- ❑ It appeared, in several locations, that inadequate support was provided for the anhydrous ammonia transfer line. Also, the anhydrous ammonia transfer line runs a great distance through processing areas with no line labeling or identification.
- ❑ Anhydrous ammonia feed to the ammonium bisulfite process is valved closed, however there is not plug or cap in the open line to prevent a release if the valve leaks or is inadvertently opened.
- ❑ Equipment handling anhydrous ammonia showed signs of significant corrosion.

- ❑ Workers were observed doing welding. This hot work was not being managed via a hot work permit since no hot work permit program exists.
- ❑ There were no level, pressure, or temperature alarms on the anhydrous ammonia or aqueous ammonia storage tanks. Industry standard requires some level of safety instrumentation / alarms to warn operator of unsafe conditions.
- ❑ Anhydrous ammonia storage tank nameplate designation is different than the P&ID tank identification numbers. Equipment identification should be consistent to allow for proper identification.
- ❑ Anhydrous ammonia storage tank nameplate information on tanks nos. 3 and 4 are not legible since they are covered by an inspection sticker. Industry standard is that pressure vessel nameplate information must always be visible to allow for proper identification of tank data.
- ❑ The temperature gauge on anhydrous ammonia storage tank #3 was inoperative.
- ❑ P&ID (Ammonia Storage Facilities, Loading & Unloading IMO V Tanks; 4/17/07) does not show the temperature gauges on anhydrous ammonia storage tank nos. 2, 3, and 4.
- ❑ There was a noticeable ammonia odor in the immediate area of the valve station at the anhydrous ammonia storage tanks. This is an indication of a leaking valve, flange, pipe connection, or fitting.

FINDINGS

Registration Information

- ❑ Note that aqueous ammonia (concentration 20% or greater) exceeding 20,000-lbs. is RMP regulated. The facility has not registered for >20% aqueous ammonia. **The facility must verify that the on-site inventory of aqueous ammonia >20% does not exceed the threshold quantity or revise their RMP registration.**
- ❑ The facility operates three anhydrous ammonia bulk storage tanks, each with a rated capacity, based on tank specification sheets, of 35,000-gals. (est. 199,000-lbs. or 99.5 tons each). The facility reported that the registration quantity is based on a maximum of 65 tons per tank, at a maximum fill rate of 90%. **The facility must review tank capacities and maximum fill levels to verify the RMP registration quantity.**

Management System [40 CFR 68.15]

- ❑ The facility must prepare a written description of its RMP management system, assign qualified personnel to implement the program and ensure such personnel are knowledgeable of RMP requirements and facility programs and procedures.

Hazard Assessment [40 CFR 68.20-42]

- ❑ The facility must revise their OCA determinations and follow appropriate procedures to assess current off-site population impact.

Process Safety Information (PSI) [40 CFR 68.65]

- ❑ The facility must compile / develop process safety information describing the technology in the process and equipment in the process as required by 40 CFR 68.65(c) and (d).

Process Hazard Analysis (PHA) [40 CFR 68.67]

- ❑ The facility must complete a PHA as required by 40 CFR 68.67.

Standard Operating Procedures (SOPs) [40 CFR 68.69]

- ❑ The facility must review the process to ensure that the three written operating procedures are sufficient to provide instruction to operators regarding safe operation of all equipment used in the process.
- ❑ The facility must modify the written operating procedures to include:
 - Consequences of deviations [40 CFR 68.69(a)(2)(i)]
 - Steps required to correct or avoid deviations [68.69(a)(2)(ii)]
 - Quality control for raw materials [68.69(a)(3)(iv)]
 - A description of safety systems and their functions [68.69(a)(4)]
- ❑ The facility must develop necessary safe work procedures (including hot work permit procedures) to ensure safe work practices are employed at the covered process. [68.69(d)]

Mechanical Integrity [40 CFR 68.73]

- ❑ The only mechanical integrity inspection and test records available for review were for the three anhydrous ammonia storage tanks and several isotainers. There were no other mechanical integrity records or schedules available for review. **The facility must develop a complete mechanical integrity program as required by 40 CFR 68.73 for all equipment, lines, instruments, and safety systems used in the covered process.**

Management of Change (MOC) [40 CFR 68.75] & Pre-Startup Review (PSR) [40 CFR 68.77]

- ❑ There was no written MOC or PSR procedure available for review. **The facility must develop and implement the required MOC (40 CFR 68.75) and PSR (40 CFR 68.77) procedures.**

Compliance Audits [40 CFR 68.79]

- ❑ There were no records of completed RMP compliance audits. **The facility must complete RMP compliance audits at least once every three years, as required by 40 CFR 68.79.**

Incident Investigation [40 CFR 68.81]

- ❑ There was no record of a written incident investigation procedure. **The facility must develop an incident investigation procedure as required by 40 CFR 68.81.**

Hot Work Permit [40 CFR 68.85]

- ❑ There was no record of a hot work permit program. **The facility must develop a written hot work permit program as required by 40 CFR 68.85.**

Contractor Safety [40 CFR 68.87]

- ❑ There was no record of written contractor safety procedures. Outside contractors are retained to work on or near the covered process (i.e., inspection contractors to perform inspections of the anhydrous ammonia storage tanks). **The facility must develop and implement contractor safety procedures as required by 40 CFR 68.67.**

Emergency Response [40 CFR 68.90-68.95]

- ❑ The facility must coordinate with their local LEPC and confirm that they are included in local response contingency plans.